VIRGINIA WILDLIFE

DECEMBER, 1957

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DECEMBER

December drops no weak, relenting tear,
By our fond Summer sympathies ensnared,
Nor from the perfect circle of the year
Can even Winter's crystal gems be spared.

—C. P. Cranch

VIRGINIA WILDLIFE

Published by VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES, Richmond 13, Virginia

A Monthly Magazine Dedicated to the Conservation, Restoration, and Wise Use of Virginia's Wildlife and Related Natural Resources, and to the Betterment of Hunting and Fishing in Virginia

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Cover

The opossum, a marsupial or pouched animal, is the most primitive mammal occurring in Virginia or North America. At birth they are so small that an average litter of from 12 to 18 would hardly fill a teaspoon. Artist Ed Bierly's unsurpassed painting portrays a typical opossum family in a favorite persimmon tree.

PUBLICATION OFFICE: Commission of Game and Inland Fisheries, 7 North Second Street, Richmond 13, Virginia

J. J. SHOMON, *Editor*

W. C. KELLNER, *Associate Editor*

L. G. KESTELOO, *Photography*

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No Nobler Gift

WITH the launching of Sputnik I and Sputnik II into outer space by the Soviets—an earth-shaking event to say the least—one cannot help wondering about the destiny of men and nations. More and more the world is confronted with a supreme decision—will intelligence or morality rule the world.

Today the fate of the human race depends upon what men do with their brainpower. Man can, if he so chooses, proceed to obliterate his living earth with atomic forces, or, he can elect the wiser course and turn some of his brainpower into greater and higher moral development. The choice is his and his alone.

The important thing we should recognize is *will intelligence alone save us!* The Russians may have it all over us in rocket intelligence, they may beat us to the moon or Mars, but what about the *means?* Does *any* means justify the *end?* Can we in this country sacrifice any of our freedoms, our institutions, just for the sake of advancement in science? Can we sacrifice our evolutionary development in ethics for the sake of a larger, faster, more powerful Sputnik? We think not. The sensational strides in the conquest of natural forces will not bring man to a higher destiny unless there is a corresponding ethical development. What good is intelligence in man if he uses this intelligence to destroy himself!

Hitler's saddists were intelligent, but where did this warped intelligence take Germany? Philosopher Bertrand Russell has said that cruelty is man's worst evil. Surely the world has learned, and many have personally seen—as I have in the liberation of internees from the German concentration camps—that man is never as cruel as when he is most intelligent. Intelligence alone is dangerous.

We in America, then, can take some comfort in the rocket race knowing that we are not sacrificing everything for intelligence—that we still have institutions and a way of life worth saving; that we believe man's transformation from the interior is still more important than the erecting of external structures. "The value of any country," a very learned man recently said, "is the sum of the values of its children." Surely any government which seeks to substitute the interests of a *state* for the strengthening of individual development is bound to be regressive in the long run and surely threatens human dignity.

America still pursues the less dramatic course. It still believes in the dignity of the individual and greatness of Nature's design.

Why did the Russians get a jump on us in the satellite program? Certainly part of the answer lies in the ideological programs of the Soviets and the United States. A nation determined to conquer the world for a fanatical ideological reason will expend more brainpower, more money and more will in any device to advance its military advantage, even in some remote phases, than will a people's democracy whose exploits in outer space have the advancement of freedom and human dignity in mind.

And what connection does this have with conservation? A very definite connection, we believe.

Man can destroy himself by atoms or depleted natural resources. One is rapid. The other is slow. Both are sure. Let our physical resources base become weakened, let the basic strength of America—soil, water, minerals, plant and animal life, our life-sustaining natural resources—get weakened and the nation is weakened. If we want to save ourselves from either folly, we cannot let down the bars of conservation and moral development. The two go together.

A conservation way of living is on the side of goodness and moral development. We can never hope to have a monopoly on intelligence. As long as other peoples live on earth there will be competition for brainpower. How that brainpower is used, however, is more important than how much is accumulated.

If men would all help to contribute to the common tasks of humanity—and conservation is only one such task—by advancing themselves in substance, by making life easier, pleasanter, nobler for others, this world would be secure.

What we sorely need in America today—what we sorely need in the world—is a sensitivity toward our whole Universe and toward all things and all creatures that share life with us.

Resolve now to do your share to help others achieve this idea of reverence and respect toward Nature and all her endowments. Offer to participate in talks and discussions and training programs before adult groups and before youth groups. Spread the gospel of reverence and respect toward our life-sustaining natural resources.

In doing so, you'll be expressing a selfhood that is sorely needed in the world today. You will be doing your share to enrich the lives of others. You will be doing service to mankind.

There is no nobler gift.—J. J. S.

Game Commission Photo by J. J. Shomon

The willow is one of our more adaptable plants. It occurs in some 150 forms, and ranges from the Rio Grande to beyond the Arctic Circle.

THE AMAZING WILLOW

Let's make our winter months more productive by planting more willows for wildlife

By J. J. SHOMON

ONE of the most amazing plants in North America is the willow of the genus *Salix*. Occurring in some 150 forms, ranging from the Rio Grande to the Arctic Circle and beyond, it provides tremendous benefits for man and beast alike.

Willows are used for lumber, boxes, posts, windbreaks, erosion control, food for humans, and browse and feed for countless mammals, birds and insects. Perhaps no other plant species in North America is as important to wildlife as the genus *Salix*. The majority of willows are shrubs. Some are trees. The native Ward's willow is sometimes of tree size. Black willow is a native tree.

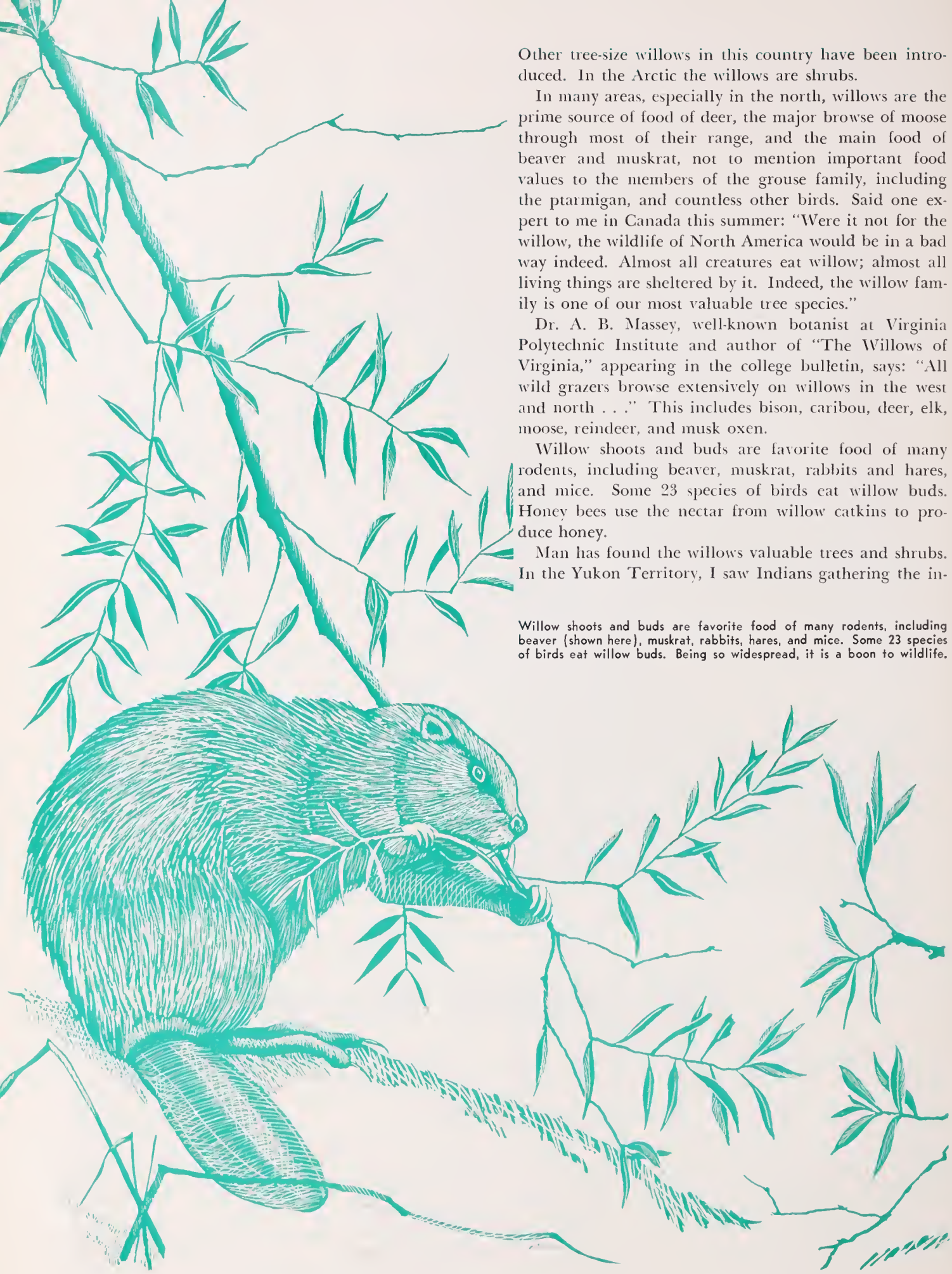
Other tree-size willows in this country have been introduced. In the Arctic the willows are shrubs.

In many areas, especially in the north, willows are the prime source of food of deer, the major browse of moose through most of their range, and the main food of beaver and muskrat, not to mention important food values to the members of the grouse family, including the ptarmigan, and countless other birds. Said one expert to me in Canada this summer: "Were it not for the willow, the wildlife of North America would be in a bad way indeed. Almost all creatures eat willow; almost all living things are sheltered by it. Indeed, the willow family is one of our most valuable tree species."

Dr. A. B. Massey, well-known botanist at Virginia Polytechnic Institute and author of "The Willows of Virginia," appearing in the college bulletin, says: "All wild grazers browse extensively on willows in the west and north . . ." This includes bison, caribou, deer, elk, moose, reindeer, and musk oxen.

Willow shoots and buds are favorite food of many rodents, including beaver, muskrat, rabbits and hares, and mice. Some 23 species of birds eat willow buds. Honey bees use the nectar from willow catkins to produce honey.

Man has found the willows valuable trees and shrubs. In the Yukon Territory, I saw Indians gathering the in-



Willow shoots and buds are favorite food of many rodents, including beaver (shown here), muskrat, rabbits, hares, and mice. Some 23 species of birds eat willow buds. Being so widespread, it is a boon to wildlife.

ner bark of willow for food. In the Arctic and sub-Arctic country, where winters are long and severe, the the Eskimos gather young leaves and shoots of willow and store them in whale and seal oil. The paste, when eaten in cold weather, is said to prevent scurvy. In our own south, the black willow, *Salix nigra,* and several of the shrubby species are important honey-producing plants.

Ornamental and Other Uses

Willows are used over the continent as ornamental trees and shrubs and, in the spring, the twigs and white floral clusters are valued for floral effects. The weeping willows and the eastern pussy willow are examples. In Oregon and California, the Christmas willow is highly regarded because of its early winter flowering. Because it is a fast-growing tree, willows are planted extensively as shade trees. Some willows, under good care and under choice moist habitat, have been known to make a large tree in five years.

One of the chief uses of willow plantings in the plains country is windbreaks. The trees are planted in hedgerows around dwellings. In the fields, they are planted along fencerows, boundary lines, watercourses, watering places.

Willows are also used extensively in streambank work and soil erosion control. In Michigan and Wisconsin, extensive plantings of willows have been made along trout streams. In nature, willows are moisture loving, have great spreading root systems, which hold the sand and soil and gravel against the action of water. If you have an erosion problem on your land, where the soil is moist to wet, or a streambank eroding, it would be well to investigate the possibilities of willow plantings.

This can be done by planting willow slips cut from healthy trees or by transplanting small shrubs and trees from areas where willows are plentiful.

This distribution map of North America shows at a glance just how widespread the willows are. The shaded areas indicate where one species or another is likely to be found.

Simple to Plant

So simple are willows to plant that all one needs is a pocket knife. Simply cut away a handful of willow slips and insert them twelve inches in loose, moist soil. Streambanks, pond and lake shores, pastures—all are excellent places for willow plantings. Willows also take

Willows are used extensively in streambank work and soil erosion control. In nature, willows are moisture-loving plants with spreading root systems, which hold the sand, soil, and gravel from being washed away by the action of water. If your land borders a stream, investigate the possibilities of planting willows.

root easily after wind and ice storms and floods. Broken willow twigs carried downstream and lodged in banks frequently take root and develop into normal plants.

The next time you're out hunting or fishing or just ambling about, think of the value of willows and undertake a planting project. Get your friends to do the same. Let's make our winter months more productive by making them produce *more willows for wildlife.*

According to Dr. John Bulger of the National Wildlife Federation, willow plantings represent one of the easiest conservation jobs for organized groups or for individuals. In his excellent publication, which is free for the asking, he says: "The story of siltation is an unhappy tale of streambank erosion. Of wholesale theft of topsoil. Of fish spawning beds covered and ruined along with them. Of navigation slowed, and reservoirs choked into beds of mud. The only good thing about siltation is that it frequently can be stopped. One method of stopping it is shown here. Poles of Purple Osier Willow have been placed along the banks with ends in the water, and wired in place. Willow cuttings stuck in at two-foot intervals would also do a good job."

Cover for Wildlife

One of the serious threats to wildlife is the constantly shrinking habitat where wild animals and birds may live. Besides food, creatures need shelter. This is known as "cover," in wildlife management language. Because of their extensive range and abundant growth, willows provide valuable cover for many forms of wildlife, and for domestic animals. Willows also provide shade areas and shelter for fish and, when made to grow in clumps in ponds and lakes, will provide concentration points for such fish as bream and crappie. Willow thickets, too, make ideal hiding places for rabbits.

Almost all wild creatures are benefited by willow in some manner. Members of the grouse family, including the ptarmigan and countless other birds, eat the buds extensively in winter weather.

In many areas, especially in the North, willows are the prime source of food of deer, the major browse of moose through most of their range. Beaver, muskrat and especially members of the grouse family use willows extensively as a source of food.

Plant Willows!

This winter, when you have little to do, when things look a little drab around the place and can stand a little improvement, why not become a practicing conservationist and start a little willow planting project of your own? Simply cut away an armful of willow shoots, one-quarter inch in diameter, from some parent trees, get out and hike and plant. Keep plants away from drains and sewers, however, because willow roots can choke up drain fields quickly. Best time to plant is on damp days. On one good rainy afternoon you should be able to put out several hundred willow slips. If you want to do still more good, form a willow planting party of scouts and other youngsters. Get out and do it up big. Farmers will love you for it—but always discuss your plans with the landowner first.

Remember: willows are a boon to wildlife and man and your efforts at promoting greater willow growth can do much to help the cause of wildlife conservation.

A Bunch of Beggars—No Less!

"The Cause of Conservation stands today on the street corner, out at the elbows and hat in hand, begging for a handout. This applies whether it is a government agency appealing or private citizens approaching the government. . . .

"There is generally found in every community a hard core of selfless, willing workers who uncomplainingly carry the conservation burden for all the free-loaders, from the standpoint of personal service and contributed funds. But conservation precepts succeed only in proportion to the effort people are willing to put forth, and the amount of determination expended to make them succeed."

Ernest Swift in *Conservation News*

How to Select a Christmas Tree

EACH December many people make inquiries on how to select and make the best use of a Christmas tree. A few suggestions, therefore, are in order.

Desirable characteristics of any Christmas tree, regardless of the species chosen, are: 1) retention of the needles between the time of cutting and the end of the holidays, 2) filled-in and symmetrical shape, 3) limbs strong enough to hold ornaments and lights, 4) nonprickly foliage with a good green color, 5) fragrant odor and 6) pliable branches.

Of the many trees meeting these requirements, the six most popular in this country are the balsam fir, Douglas-fir, black spruce, eastern red cedar, white spruce, and Scotch pine. These can be identified by their needles. Christmas trees are usually too young to have fully developed bark characteristics or cones, which can be used to identify older trees.

The balsam fir, distinguished by its unusual fragrance, can be recognized by its short, flat, dark green needles which are rounded at the tips. They are attached to the twigs at opposite sides in a featherlike arrangement. The twigs, too, are opposite each other, thus resembling crosses. The smooth bark of the trunk and limbs also carries pitch blisters filled with resin.

The Douglas-fir has short, flat, soft, pointed, dark green needles which are attached all the way around the twig. This is a western species and very popular on the west coast.

The black spruce needles are stiff, crowded, somewhat curved, four sided and short. They are a pale blue-green and end in a sharp hard tip. This tree sometimes has cones when bought because it grows so slowly that it is old enough to bear fruit though still small. This evergreen is common to the cold climes of eastern and north-central United States and most of Canada.

The eastern red cedar has scalelike, dark, blue-green needles. It is common throughout the South, and especially fond of red clay soil.

White spruce needles are incurved, sharp tipped, blue-green and four sided. This tree retains its needles exceptionally well.

Scotch pine is getting more and more popular as a Christmas tree these days because it has long-lasting needles and good symmetry. Today thousands of these trees are grown in the northern states for Christmas use.

Other good Christmas trees are Norway spruce, red pine, Colorado blue spruce, grand fir and southern pines.

The most important thing to look for in buying a Christmas tree is freshness; so select a fresh tree. If the needles are turning brown, the tree has already dried out, making it not only undecorative but also a fire hazard. To keep it fresh, saw off the butt end at least one inch above the original cut and stand the tree in a container of water as soon as possible. Since the tree absorbs the water, the container should be refilled daily.

When Christmas is over, don't just burn the tree up, but take it to a fence row or field and let it be used as shelter for wildlife.

The Christmas Tree in America

TRIMMED Christmas trees first appeared in the United States sometime during the American Revolution. It was during this conflict that homesick Hessian soldiers trimmed evergreen trees to soften their desire to be with their families during the Christmas season.

The idea of trimmed trees for holiday festivities spread rapidly through America. During the early days trimmings were simple and consisted primarily of strings of cranberries and popcorn and small clumps of cotton. Additional trimmings were in the form of paper ornaments.

Over the years the tradition of having a trimmed tree has become so widespread that now over two thirds of all American families follow this custom.

In following the evolution of the Christmas tree, the fir apparently is the most commonly used conifer. This is probably the result of the position of the twigs in relation to the main stems, which form crosses. Even today the fir tree is the species most commonly desired by the average American.

Conservation-minded Americans often resent the widespread cutting of conifers during the holidays. President Theodore Roosevelt, a staunch conservationist, would not allow a tree in the White House until his sons sneaked one in and set it up in their room. Gifford Pinchot, the President's advisor on conservation, explained that under conditions of supervised harvesting, removal of certain suitable trees from the forest helped to establish faster growth in the remaining trees.

Individuals who object to the cutting of Christmas trees should remember that foresters are interested not only in the perpetuation of the forests but also in the correct use of these lands. Many acres of idle and eroded land are now being utilized for Christmas tree production. The growing of these trees as a crop on waste areas can produce a sizable income for a farmer. In addition to the extra income, the tree plantations will help in holding and rebuilding the soil.

Many families utilize a living tree during the holidays. A small, well shaped tree can be planted in a tub and moved indoors during the holidays. If watered regularly, the tree can then be added as shrubbery in the yard. A tree of this type can be used for two or three years or until it becomes too large for convenient handling.

Game Commission Photo by Kesteloo

With the increase in populations, short work weeks, more spending cash, and a sudden awareness of the recreational value of the out-of-doors and the national forests particularly, people are flocking to the open areas to hunt, fish and camp.

Operation: OUTDOORS

By R. E. ELLIOTT
Staff Assistant, George Washington National Forest

FOR more years than forest officers care to remember, the campgrounds, picnic areas, and other recreational facilities on the national forests have gone downhill year by year for lack of adequate money to maintain them.

At the same time that this was taking place, the increase in use by the general public has been rapid. The Civilian Conservation Corps left excellent recreation facilities behind them as monuments to their work. The forests had just about all they needed and more to take care of the demand.

The deterioration of facilities and the increase in use must have crossed each other's paths about 10 or 15 years ago on a general nation-wide basis, according to the best Forest Service estimates.

With the increase in populations, short work weeks, more spending cash, and a sudden awareness of the recreation values of the out-of-doors generally and the national forests particularly, use has become so heavy that the existing areas are overcrowded and are wearing out rapidly. They just can't handle the amount of use they are getting.

How much use outdoor recreation areas would get if they were sufficient in number and included swimming facilities is hard to judge.

This type of demand for outdoor recreation means good business for many people. The National Association of Travel Organizations estimates that tourists spent 24 billion dollars in 1955. Much of this tourist trade was directed toward the national parks and forests.

On the George Washington National Forest the increase in demand is best illustrated by a tally of actual paid admissions at Sherando Lake during the five-year period since the area has been operated by a concession-

aire. During this time the number of camping permits issued each year has increased 197 percent. The increased use by adults was 233 percent and children 402 percent. Picnicking and swimming at Sherando stepped up 15 percent for adults and 40 percent for children, with a 19 percent increase in number of cars during the period. The lower increase in the latter figures was due to the fact that maximum use of this type has been reached and little or no increase is possible.

With these facts in mind, forward-thinking conservationists have developed a plan which has been popularly named "Operation Outdoors." Without going into detail on actual projected use counts and predicted appropriation figures it can be said that, nationally, the use will increase about 45 percent in the next seven-year period. Sufficient money will be made available to bring all present facilities up to first-rate condition and to expand present areas and build new facilities so the capacity of all areas will be double what it was in 1955. The increased use is considered conservative since the increase over the ten-year period 1946-1955 was 250 percent.

The George Washington National Forest has taken steps to get in line with this increased program. Funds for the 1958 fiscal year have been allotted to the forest and rehabilitation work of a major nature is already underway at the Elizabeth Furnace Area near Strasburg and Sherando Lake near Waynesboro. Necessary work is being done at the smaller areas but we still will be left with a big job on these next year.

A new camping and picnicking area has been laid out near Blowing Springs at the site of the old convict camp on Route 39 west of Warm Springs. Money is available to build this area this year and the forest hopes to put it into operation by the beginning of fishing season next spring.

The forest plans to develop layouts and specifications for camper-swimmer-picnicker areas at White Oak Draft off Route 250 west of Churchville, at Union Springs west of Harrisonburg and in Paddy's Run in the Shenandoah Mountain country west of Strasburg. This will still leave serious gaps in the recreational system on the forest but in the ten-year period ahead it is hoped that developments of this type can be planned for and developed in other places where their need is most felt.

Many problems are encountered in the creation of areas such as this but the forest will combine the technical skills of its recreational planners, engineers, rangers, and others to get the job done.

If the plans move along in an orderly manner, the end result will be more outdoor recreation for more people under favorable conditions.

Details of *Operation Outdoors* are covered in the latest publication of the U. S. Forest Service, under the sub-title *Part I, National Forest Recreation*. Copies may be secured from the U. S. Forest Service in Washington, D. C., or from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. The price is 20 cents.

Mr. Hunter, Do You Know?

By FRANK A. CONNALLY

Information & Editorial Specialist, U. S. Forest Service

SPORTSMEN have been building up a fine reputation in the avoidance and prevention of forest fires. But every fire during hunting season is blamed on hunters. And hunters actually do cause forest fires; some by accident and many through carelessness. The record is good when you compare the number of fires with the number of hunters. And Smokey Bear says, "God bless you." But when you consider the total number of fires, the record is bad.

Do you have any facts about what it can cost in time and money (public money that you and I ultimately pay) to put out a forest fire? This is the way ranger "Spud" Hile, in charge of the Rockcastle Ranger District, Cumberland National Forest, Kentucky, puts it to the fellows he hunts with. These are some facts that you can chew over in camp or talk over with folks who may not be as cautious about fire as you and your associates are.

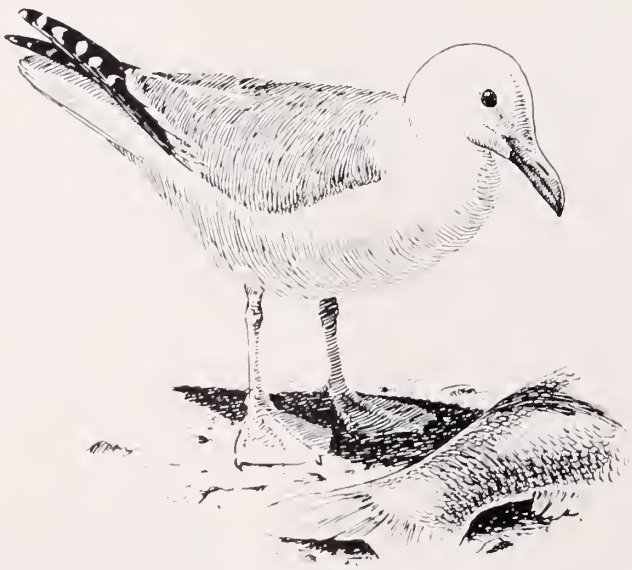
Spud Hile said: "This is what can happen when even a little fire starts. First, it takes nearly an hour to get an adequate crew of fire fighters to the average fire. In that hour, with a dry woods and a good wind, that forest fire could increase from a match, a cigarette, pipe ash or a warming fire to an 80-acre fire.

"It would take 36 men, working as hard as they can, four hours to put a control line around that fire. It would take six cars to haul the men and one truck to transport fire fighting tools to the fire. It would take half of those men eight hours the following day to put out all the smokes inside the fire. It would take $95 worth of food to feed the fire fighters on the fire. If everything went smoothly—the fire did not jump the control line—that one little match or cigarette would have cost about $500, your money, to put out."

Then Spud added: "Brother Hunter, this may shock you. Over half of the fires on the Rockcastle Ranger District started through hunters' thoughtlessness or carelessness last year. You have too much of an interest in the forests to let that happen again."

Probably the best-known scavenger throughout the world is the turkey vulture. Great numbers of dead animals are annually consumed by this rather large bird.

Even the well-known and sassy blue jay is somewhat a scavenger. In Virginia he stays with us throughout the year and searches for all manner of food including fresh animal flesh.



The diet of the herring gull, found along our eastern seashore and off-coast shipping lanes, is fish. It makes little difference whether the fish has been aged for a few days; this gull relishes carrion.

To Keep the Outdoors Free of Dead and Decaying Material, Many Animals Join Hands to Form—

NATURE'S BUSY SANITATION CREWS

By D. E. CANTNER
Special Services Officer

UNKNOWN to many people, we have in nature a most efficient sanitation department. The hard-working animals that make up this group perform their duties 365 days a year, 24 hours a day. Many are unpopular because of their looks or habits but their incessant labor makes our world more attractive and results in a healthier environment for all. A brief discussion of some of these scavengers will explain their duties and relate their importance in our surroundings.

A scavenger well-known throughout the world is the turkey vulture. Offensive in his actions, he often regurgitates partially digested carrion and directs it with great accuracy while circling over an enemy. Great numbers of dead animals are annually consumed by these repulsive ghouls of the sky. But we can thank them for doing a fine job in keeping our highways, fields and woods free of dead animals.

The well-known and rather sassy bird, the blue jay, is a busybody of the bird world that can be seen flitting around in our midst any month of the year searching for all types of food. He makes a meal on any bird feeding tray that may be in his path and often includes fresh animal flesh in his diet.

Along our eastern seashore and off-coast shipping lanes we find the herring gull. The main item in the gull's diet is fish and it makes little difference to Mr. Gull whether the fish is fresh or if it has been aged for a few days. These birds relish carrion with the same enthusiasm as the vultures.

Hundreds of thousands of gulls were formerly killed for the millinery trade. Realizing the gull's importance as a scavenger, interested persons began campaigns for its protection. Under the provisions of the Audubon Law, it is now a misdemeanor to kill this species.

Gulls flock by the thousands at sewage openings, gar-

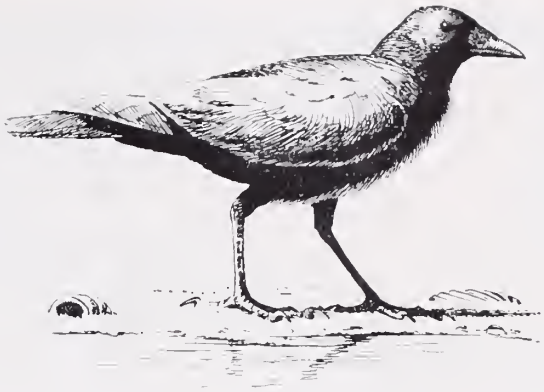
bage dumping areas and fish wharves. When large numbers of fish are killed by disease or poison, hordes of these birds will immediately set to work cleaning up before the decaying carcasses become offensive.

The fish crow, which resembles our common eastern crow, is attracted to our tidal streams and coastal areas where it consumes large numbers of dead fish and animals.

Our eastern crow is also non-selective in his diet. He eats practically anything that can be seized in his bill or claws. Crows, along with the vultures and our mammal scavengers, make short work of animals killed on our highways. Quite often we see this black, graceful bird standing on the highway tearing away at a less fortunate traveler of the road.

A leading consumer of dead animal flesh is the opossum. His diet is omnivorous, indicating that he will eat practically anything, plant or animal. A dead carcass is usually found rather quickly by one of these nocturnal raiders. It is not uncommon to find a mother opossum and her family gingerly eating away at the interior of a dead cow or horse, disposed of by its owner. Although this "grinning idiot of the woods" is disliked by many people, he certainly plays an important role in keeping our surroundings clean.

An important member of the clean-up crew is the fox —both red and gray. These animals are predators and the bulk of their diet consists of mice and other small mammals, insects, poultry and fruit. The remains of fowl discarded from poultry farms usually do not stay intact for long periods. A prowling fox will make a daily visit to these areas in search of meat, both fresh and aged. Fox trappers long ago realized the attraction of foxes to carrion and many use ripe flesh for bait.

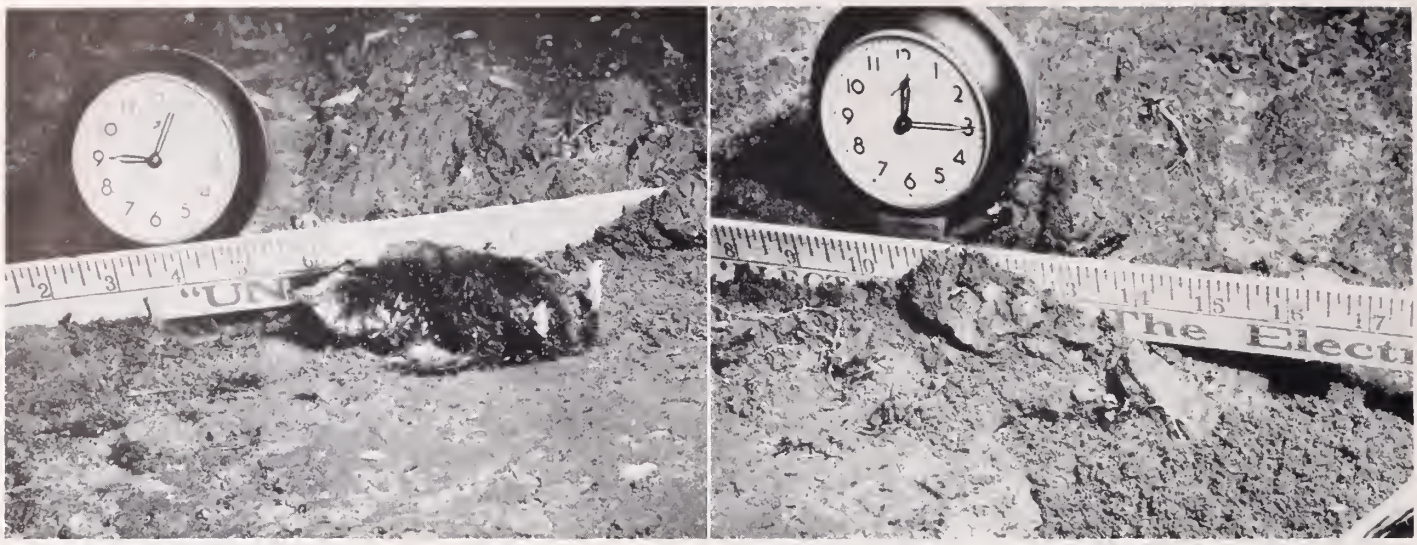


The fish crow resembles our common eastern crow and helps keep our tidal streams and coastal areas clean. It consumes large numbers of dead fish and other animals.

The fox, both red and gray, is an important member of the clean-up crew. Fox trappers long ago realized the attraction of foxes to carrion and many use ripe animal flesh for bait.

High on the list of carrion eaters is the opossum. It is not uncommon in rural areas to find a mother opossum and her family eating away at the interior of a long-dead cow or horse.

Food habits studies show that the skunk includes carrion in its diet although he seems to prefer flesh that is relatively fresh. Nevertheless he helps to maintain a clean and healthy countryside.



Game Commission Photos by Kesteloo

Scavenger work in nature isn't all done by our animals and birds. Lesser creatures play an important role in this job. This small sexton beetle buried a 5-inch dead mole in three hours. This accounts for the disappearance of many small animals in our yards and gardens.

Many game and domestic animals allegedly killed by foxes are individuals that have died of natural causes or from the effects of inclement weather. For this reason, foxes are often unjustly persecuted.

Although the skunk is considered a destructive animal by many people, he is really an asset to the plant and animal community. Food habits studies indicate that during the warmer months insects make up the bulk of his diet, along with injurious rodents plus lizards, crayfish, earthworms, fungi and carrion. Any freshly killed animal or one that is slightly aged will be readily eaten by this black marauder of our fields and woods. A family of skunks will rid the community of great numbers of dead animals and, as a result, help to maintain it in a clean and healthy condition.

The fish hawk, or osprey, feeds heavily on fish, live and dead. Many of these fish are diseased or injured and would eventually wash up on the beach, thereby creating a sanitation hazard.

The fish hawk or osprey, so common along our coasts and tidal streams, is a heavy consumer of fish both live and dead. These graceful birds can be seen at altitudes of from 30 to 100 feet winging their way over water in search of food. Their keen eyesight readily discloses a fish swimming near the surface. A quick dive, followed by a tremendous splash, usually results in a fish being held firmly in the strong claws. Many of these fish are diseased or injured and would eventually wash up on the beach, thereby creating a sanitation hazard.

Scavenger work in nature isn't accomplished entirely by our animals and birds. Lesser creatures also play an important role in this huge job. The carrion beetle, one of our insect scavengers, lives upon the decaying flesh of birds, animals and other insects. Dead bodies can be scented for great distances through their antennae. These small workers perform a great service in keeping our environment sanitary.

A relative of the scavenger beetle that also works in the sanitation department is the sexton. L. G. Kesteloo, Commission photographer, was fortunate in obtaining a series of pictures showing a sexton beetle moving a dead mole. By placing a yardstick along the path of travel and a clock nearby, it was found that during a three-hour interval the mole was moved approximately eight inches and completely buried. This will attest to the great strength and energy of the sexton and help in explaining the disappearance of many small animals in our yards and gardens.

Sexton beetles move animals from one location to another so that soft earth can be found for easy digging. The animal is then buried and utilized for food.

In addition to the beetles, a host of other insects help in the clean-up program. The German cockroach, an enemy of the housewife, has a cousin in our woods and fields that will scavenge on dead plant and animal

(Continued on page 26)

VIRGINIA WILDLIFE

CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

PHEASANT SEASON TO CLOSE IN TWO COUNTIES. During the last meeting of the Virginia Commission of Game and Inland Fisheries at 7 North Second Street, action was taken upon an emergency request from the Northumberland County Board of Supervisors. This request dealt with the closing of ringnecked pheasant season in Northumberland and the adjoining counties so that existing pheasants would have an opportunity to reproduce and establish a permanent population.

The Commission unanimously voted to close Northumberland and Lancaster Counties (Richmond and Westmoreland are already closed) to pheasant hunting until further notice.

BIG-GAME TROPHY CONTEST WINNERS ANNOUNCED. At the finals of the Virginia Big-Game Trophy Contest in Newport News, Lynn Driver of Harrisonburg won top honors in Class I competition. Driver's deer, a beautiful 14 pointer, was killed in Rockingham County during the 1956-57 open season. Thomas Lam, Harrisonburg, won first place in the Class II competition and B. W. Armentrout, of Keezletown, won first place in Class III.

The bow and arrow class was won by Leon Powell, of Covington, while Raymond Allen took first place in the bear competition.

CONSERVATION FORUM PLANNED. Mrs. Arthur A. Dugdale, conservation chairman of the Garden Club of Virginia, has announced that a conservation forum will be held at the Hotel Jefferson on March 21, 1958.

Speakers will be present from the various resource agencies in Virginia and will explain the services offered to groups such as the garden clubs of the state.

NEW PRESIDENT OF THE SOUTHEASTERN SECTION OF THE WILDLIFE SOCIETY. At the eleventh annual meeting of the Southeastern Association of Game and Fish Commissioners, held in Mobile, Alabama, Chester Phelps, chief of the game division, was elected president of the Southeastern Section of the Wildlife Society. His tenure as president will run for the coming two years.

NATIONAL WILDLIFE WEEK ANNOUNCED FOR 1958. Stewart M. Brandborg, assistant conservation director of the National Wildlife Federation, has announced that the 1958 National Wildlife Week will be held during the week of March 16-22. The theme this year will be "Our Public Lands." Conservation groups throughout Virginia are urged to participate in this program. Planning should begin early for a successful Wildlife Week in the Old Dominion.

NORTH AMERICAN WILDLIFE CONFERENCE. The 23rd North American Wildlife Conference will be held on March 3-5, 1958, at the Jefferson Hotel, St. Louis, Missouri. A large number of key conservation figures are expected to attend this important conference.

CONSERVATION FELLOWSHIPS ANNOUNCED. The National Wildlife Federation, an organization devoted to conserving our natural resources, has announced its 1958-59 fellowships in conservation. These education grants carry a stipend of $500 for undergraduate students and $1,000 for graduate, post graduate or special students. Projects which may be considered for these grants include such activities as curricular problems, teacher training, farmer-sportsmen relationships, textbook development and many others.

Those interested in applying for a fellowship should write to Ernest Swift, Executive Director, National Wildlife Federation, 232 Carroll Street, N. W., Washington 12, D. C. The completed applications must be filed on or before December 31, 1957.

Last year in Virginia alone 26,633 duck stamps were sold. In the United States and her possessions there were 2,332,014 migratory bird hunting stamps sold.

Duck hunting is the favorite sport of many Americans. Part of the fun is choosing the correct spot to construct a blind so that the ducks will be there when the shooting starts.

RETRIEVE T

Use a dog to r

America's annual wildlife loss can be seriously cu
season. Crippled game unretrieved is a needles
creatures, poor conservation. Here in pictures i
The dog is a Weimaraner.

After the shooting is over, master and dog leave the blind to retrieve downed duck. A good dog not only saves birds but is a good companion.

The Weimaraner swims out and retrieves the duck. A hunter with a good retriever will bring to bag many birds that otherwise are left to die a lingering death and are lost.

A well-placed spread of decoys will bring the birds into range and give the hunter a chance for a quick clean kill. This is a conservation measure.

There are many kinds of duck blinds—some elaborate, heated, comfortable; others merely reeds and rushes placed to partially conceal the gunner. Note retriever patiently waiting in this blind.

IAT CRIPPLE

over your game

wn by recovering cripples during the hunting
ste of game, an unnecessary cruelty to defenseless
simple story of a retriever at work in waterfowling.

Game Commission Photos by Kesteloo

Hunting with a retriever is a sound conservation measure. Watching a good dog work will add much pleasure to a day's hunt whether it be waterfowl or upland game birds.

This retrieved duck in the bag will leave another for other hunters to shoot or one that will be the brood stock for another year.

Game Commission Photo by Kesteloo

With the general hunting season underway, the state Game Commission is naturally interested in sparking a hunter safety program. It is its responsibility to help keep hunting the safe sport that it should be.

Outdoorsmen Let's be Safety Conscious!

By WILLIAM C. KELLNER

Assistant Chief, Education Division and Associate Editor, Virginia Wildlife

IF you do a lot of living out-of-doors as a hunter, fisherman or camper, there is a strong probability that sooner or later an accident may mar your pleasure. Fortunately, most outdoor accidents are minor so that elementary first-aid in the field is adequate treatment. Nevertheless, each year, thousands of vacations are ruined and victims made miserable because a thoughtless moment has resulted in a mishap. This is unfortunate when a little planning could have prevented such an occurrence. Planning can make the difference between an enjoyable, successful outdoor expedition or an unpleasant ordeal.

Many people who take outdoor vacations sit at a desk fifty weeks out of the year. Their most active exercise is pushing a pen or shuffling papers on the desk. Soft, unprepared, they should realize that sudden outdoor exercise is foolhardy. Hunters, for instance, without exercising beforehand, or conditioning for the physical rigors demanded in the hunting field, will crowd into a week or two enough exercise to equal what they take all year round. From a sedentary life to strenuous, heart-straining movement, the result has been death to many hunters. It is too much to expect a heart to pump blood to overworked muscles that are not used to climbing anything higher than a short flight of stairs. Imprudence can kill and ruin an otherwise thrilling experience. If you tire, slow down and rest so that you may live to enjoy another hunting day.

Safety precautions are not only for those hunters who do not condition themselves beforehand, but also for all persons going into the woods, fields and mountains who will walk a great distance when they are not used to it. Usually, in hunting country the terrain is broken and uneven. In mountain sections, it is often rough and dangerous. Here is a good invitation to trouble for there is always a chance for a fall. Sprained ankles are common to hunters. Sometimes it is a simple matter to turn your ankle on a perfectly smooth trail; however, most sprains result from stepping into leaf-filled holes or on loose stones or slippery logs. Watch where you step, be sure of your footing or suffer a badly sprained ankle which would certainly incapacitate you temporarily for further adventures in the out-of-doors.

Some gunners have already experienced cold hunting

this year. Late season hunting will be more disagreeable than the present time. Warm, comfortable clothes including footwear are the most important items for the winter trip into the out-of-doors. Hunting clothes should be strong, durable and above all, easy fitting. Proper clothing should not bind nor chafe . . . neither should it be clumsily oversized for this might contribute indirectly to an accident.

In the past, red has been the accepted and designated color for hunting clothes to assure safety in the field and woods, but recent developments and research have indicated that the so-called fluorescent colors such as fire-orange, neon-red and yellow show up better in all kinds of light. They furnish more protection from trigger happy hunters than the commonly used red. Ordinary fabrics, no matter what color, have a tendency to blend in with the colors of autumn foliage while these new fabrics and colors stand out in bold contrast to anything nature provides as a background.

With the general hunting season underway, the state Game Commission is naturally interested in sparking a hunter safety program. It is its responsibility to help keep hunting the safe sport that it should be. Last year in Virginia, there were over 200,000 licensed hunters in our fields and woods, yet we had only 15 accidents, but four of them were fatal. Statistically this is but a minute fraction of one percent of the hunting fraternity. Even if there were no gunning accidents an education program would be necessary to remind hunters to be constantly careful. It is impossible to evaluate an educational safety program but undoubtedly such programs are important factors in helping to keep accident rates low. Every hunter should be familiar with his gun and should know and practice the rules of gun safety. The cardinal rule is to treat every gun as if it were loaded.

The privileges of hunting carry with them certain responsibilities. They are clearly and simply enumerated in New York State's excellent *Hunter's Manual*. They are as follows: A hunter's responsibilities are:

1. To hunt without injury to himself or others.
2. To hunt without harm to another's property.
3. To hunt without interfering with the sport of another.
4. To hunt without doing harm to the future game crop.
5. To hunt without causing undue suffering to a living creature.

Seasonal warnings for safety precautions when outdoorsmen are concerned bring into focus not just the woodsmen but the watermen. Senseless drownings in Virginia have risen sharply in the last decade. Last year in this state alone, we had 186 drownings; 139 were swimming accident victims while 47 persons drowned while out boating. One reason for this high loss of life is that the number of individuals attracted to water activities such as boating, fishing and swimming has increased tremendously. Accident rates are higher because there have been more recreational opportunities that have developed from the accessibility of the many ponds, lakes and reservoirs being constructed each year in the state. Prime examples of big impounded waters in Virginia are Buggs Island with 52,000 surface acres of water, Philpott Lake with 2,800 acres, and the South Holston Reservoir with 8,000 acres of water. While these water projects appeal to the public and are a real civic contribution to the people of the Commonwealth of Virginia, there are too many people who are unused to the water and have no water safety training who are responding to the publicity programs on the various ponds, lakes and reservoirs. This lack of training and understanding in water safety is the underlying cause of many lives being needlessly lost each year due to unsafe acts in, on,

(Continued on page 23)

Every hunter should be familiar with his gun and know and practice the rules of gun safety. The cardinal rule is to treat every gun as if it were loaded. Practice caution in the out-of-doors and your trip will be more enjoyable.

Game Commission Photo by Kesteloo

S. C. S. Photo by Carter

Good farming practices, such as contour plowing and strip cropping, aid the wildlife present on a farm. Good nesting cover is provided in the area between the row crops if mowing doesn't take place too early.

Conservation Farming—

The Key to Future Wildlife Crops

FARMERS and ranchers in the United States hold the key to successful wildlife crops in the years ahead.

This is true because more than 85 percent of our potential hunting land is in private ownership or control.

It is true the bulk of our hunting is provided by rabbits, quail, pheasants, and other kinds of wildlife produced on farms and ranches.

Thus, our wildlife crop is produced and harvested, for the most part, on lands that are used for cultivation, livestock, or wood products. Only a small amount of land, mainly in publicly owned refuges and shooting grounds, is used exclusively for wildlife.

And since wildlife is produced on lands used primarily for other purposes, the success of wildlife production in the future depends on how farmers and ranchers use and treat their land.

Soil Conservation Practices Build Wildlife Habitat

In the past 25 years, farmers and ranchers have made great progress in a nationwide soil and water conservation program. A million and a half are cooperators with soil conservation districts. These farmers and ranchers follow well-rounded conservation plans which often contain specific wildlife-improvement measures. Most farmers who are not district cooperators are carrying out one or more conservation practices that benefit wildlife, often with cost-sharing assistance from the Agricultural Conservation Program Service of USDA.

Fortunately, almost every practice that helps protect and improve soil and conserves water also improves food and cover for wildlife. Improved grass on rangeland and in pastures, crop stubble, grass waterways, windbreaks or shelterbelts, and other of the "vegetative" practices which aid wildlife directly, are the foundation measures for soil and water conservation.

And, when land use and vegetative measures alone are not adequate to control erosion, small dams and other supplementary structures may have to be built. These, in turn, usually provide water and cover for wildlife.

The basis of a conservation plan on a farm or ranch is a land-capability map. This map helps a farmer or rancher know his land better. It helps him decide what is the safest and best use for each piece of land. It tells him which land is best suited for crops, which is best for pastures, or woods, and which would be best reserved

for wildlife.

The Soil Conservation Service, which provides technical help to farmers and ranchers in soil conservation districts, regards wildlife as an important product of the land. It helps and encourages farmers and ranchers to recognize that wildlife, like other crops, must be intentionally produced and managed. It shows them how wildlife improvement fits logically into a soil and water conservation plan.

Wildlife Improvement in Conservation Plans

Among the soil and water conservation practices designed specifically for wildlife-habitat improvement are marsh management, odd-area management, and the planting of wildlife borders.

It has been estimated that there are about 75,000,000 acres of wetlands where, for various reasons, agricultural drainage is not desirable or feasible. Some of this wetland is marshland of a type suitable for the production of furbearers and migratory waterfowl. *SCS is providing technical assistance to farmers in managing these and other wetlands and improving their wildlife production.* Practices being applied include water-level control, controlled burning, seeding and planting, and regulating livestock grazing—all designed to control water and vegetation for best wildlife habitat.

Odd areas on many farms and ranches are being managed and improved as wildlife land. These areas include rocky spots, blowouts, sinkholes, borrow pits, abandoned roads, small areas isolated by ditches, streams and gullies, and similar pieces of land not suitable for crops or pasture. Such areas are usually fenced to protect them from grazing. Burning is controlled and, when necessary, trees, shrubs, and other plants that provide wildlife food and cover are planted. *Although odd areas are usually small, they occur on many farms and ranches and total about 10 million acres for the country as a whole.*

Strips of land between cultivated fields and woodlands are often unproductive and badly eroded. Shade and competition from the trees make it difficult to raise cultivated crops on such woodland borders but they can be made productive of wildlife—particularly of bobwhite quail in the Southeast. After considerable trial, SCS has found that the seeds of bicolor lespedeza are a high-quality quail food and that this plant does well on these border sites. The shrubby bicolor is planted adjacent to the trees and the low-growing sericea lespedeza or various adapted grasses are planted next to the cultivated land. This combination of plants protects the field border against erosion and makes it a productive wildlife area.

During 1956, SCS provided technical assistance for 416,500 acres of wildlife-area improvement. The total land improved for wildlife at the end of that year was 3,772,500 acres.

Conservation Measures of Special Wildlife Value

The "living fence" of multiflora rose is becoming common in many regions and is an important influence on populations of small game. These fences are stockproof and are often used to separate pastures from cultivated fields. They are especially adapted to sites where the fence line must be irregular, as around gullies and along streambanks. Multiflora rose fences provide excellent wildlife cover and are practical and inexpensive.

Windbreaks of trees and shrubs are valued additions to farms and ranches not only in the Great Plains, but in many other places where farmsteads, crops, and livestock must be protected from damaging winds. *The 26,900 miles of windbreaks now on the land make a major contribution to wildlife habitat on farms and ranches.* These lanes of woody vegetation can be very important for wildlife as well as for erosion control, especially since special attention is given to the inclusion of trees and shrubs that provide food and cover.

Game Commission Photo by Kesteloo

Land terracing and the planting of stream banks help to cut down on soil erosion and also provide food and cover for game animals and furbearers.

Game Commission Photo by Kesteloo

Many farmers, who recognize the importance of wildlife, manage odd areas for game. These include rocky sections, sinkholes, abandoned roads, borrow pits and otherwise useless areas.

Ponds are being built by farmers and ranchers at the rate of about 89,000 a year, and more than 815,000 of them have been constructed by soil conservation district cooperators. These ponds have impressive values for wildlife and recreation. A study of 91 ponds in Missouri revealed that about 90 species of birds and 10 species of mammals lived in the immediate vicinity. Cottontail rabbits were found at 85 percent of the ponds, doves at 65 percent, muskrats at 63 percent, and bobwhite quail at 55 percent.

A study made in South Dakota showed that in the 39,000 square miles west of the Missouri River there were 40,000 manmade impoundments which contained about 100,000 acres of water.

In one county, it was found that ponds averaged from 5 to 6 breeding pairs of ducks per pond, including more than 20 young ducks to the flight stage per pond. Thus, these manmade impoundments in western South Dakota are responsible for a new breeding population of ducks. These and other examples demonstrate that farm and ranch ponds provide important wildlife habitat, often where there were little or no water areas before.

Farm ponds—usually built to provide water for livestock, irrigation, fire protection, or other farm purposes —are often used for producing fish and add greatly to recreational opportunities in each community. Technical assistance was provided by SCS for 54,300 such fish ponds in 1956. From each of them the landowner can expect to harvest by hook-and-line fishing from 100 to 300 pounds of fish per acre each year.

Farmer-Rancher Decisions Affect Wildlife Increase

An important fact, often overlooked or discredited, is that the production of fish and game is something which the private landowner or operator can accept or reject. By his decisions, he can effectively aid or seriously hinder the increase of wildlife that uses the plants and water on his farm or ranch land.

Because the farmer or rancher must first of all look to his land for a livelihood, his land-use decisions may, in fact, be adverse to wildlife increase. And because sportsmen and other wildlife enthusiasts are primarily interested in maximum wildlife crops, these two interests may clash unless effective cooperation and understanding is obtained.

A good example of this is found in 86 counties of North Dakota, South Dakota, and Minnesota which comprise not only an important agricultural region but also an important area for waterfowl.

In this area there are a great number of natural depressions which catch and hold water. Known as potholes, these wet areas range from a fraction of an acre to several acres in size. Some contain water the year around. Many, however, are wet for only a few weeks each year and are usually plowed and farmed during the drier months of the year or throughout entire dry years.

Farm Drainage in the "Pothole" Region

Farmers frequently wish to drain temporarily or seasonally wet soils as a means of eliminating nuisance areas that interfere with efficient farming operations. Drainage of this type sometimes makes possible a desirable shift in land use and more effective use of soils best suited to crops.

Under these conditions, and when drainage is otherwise a desirable part of the soil and water conservation plan, the Soil Conservation Service provides assistance for drainage just as it does for some 30 other soil- and water-managment practices applicable in the pothole region.

It does so, however, only after pointing out wildlife use as a desirable alternative use of wetlands, if such is the case. It encourages soil conservation districts and

S. C. S. Photo by Postelethwaite

Drainage of wetlands should be done only after careful consideration of the area. A technician should be consulted before a draining project is started.

Game Commission Photo by Kesteloo

Farm ponds, in addition to holding water for livestock and irrigation, provide an area for recreation. These bodies of water are very productive of fish and furnish wildlife with important necessities.

other sponsors of watershed projects, as well as individual farmers, to consider fully *all* phases of soil and water problems, including related wildlife values.

Under a policy established early in 1956, the Soil Conservation Service does not provide drainage assistance when the primary object of such drainage is to bring new land into production. The Agricultural Conservation Program operates under a similar policy.

Soil conservation districts cover all or part of 78 of the 86 pothole counties. These districts include a total of nearly 51 million acres of land. On farms of district cooperators, a total to date of slightly more than one-half million acres, or about one percent of all land in districts in the pothole counties, has been drained with SCS technical assistance.

By far the largest part of this was drainage of land that had too high a water table within the soil root zone, but with no water standing on the surface.

In a second category, drainage benefited some 261,000 acres of land that is usually farmed because it is dry in many years or goes dry early in the season.

In the 20 years districts have been in operation, nearly 16,000 farm ponds have been built, adding at least 20,000 acres of water that provides waterfowl habitat and serves other agricultural purposes in the pothole region.

In addition to farm ponds, a great amount and variety of soil and water conservation practices are being applied at a rapid rate on land in the pothole counties. Furthermore, SCS has assisted in specific wildlife-habitat improvement on 98,000 acres in this area. This includes direct attention to increased production of waterfowl and to upland game and furbearers. It comes particularly through water control in marshes and their protection from burning and grazing. It also involves the planting and protection of odd areas.

Three full-time SCS biologists have been assigned to work in the three states where most of the potholes occur. They are helping to develop new conservation measures that benefit and improve habitat for waterfowl, furbearers, and upland game.

In other areas of the country, land clearing, clean tillage, burning of crop residues, and other common farming practices are sometimes harmful to wildlife. Prohibition of these practices is not the answer. Instead, farmers must be helped to appreciate the need for and values of protecting and improving wildlife habitat as an integral part of a total soil and water conservation plan for each farm or ranch. At the same time, sportsmen need to gain a better appreciation of the farmer's problems and seek ways to encourage and help him produce larger crops of wildlife.

(Courtesy USDA Soil Conservation Service.)

SAFETY CONSCIOUS! (Continued from page 19)

and around the water by the landlubbers.

Although mid-summer is the emergency season for water safety, many drownings occur to waterfowlers and fishermen in the winter months, hence determining that water safety is a year-round responsibility. Boating accidents take the lives of duckhunters and fishermen every year here in Virginia. If boating enthusiasts would be more safety conscious, using plain common sense and consideration for others, many accidents could be avoided.

The Water Safety Congress offers a few basic rules and suggestions for the safe handling of row boats, outboard motors, canoes and other small craft. They are well worth noting and heeded even by the most experienced seaman:

1. Intoxicants and water don't mix. Stay out of boats and away from water if you intend to drink.
2. Never overload a boat. Do not try to pile the entire family into one small boat built to accommodate three at the most. One person per seat is usually a good rule to follow for more than that could lead to disaster.
3. If your boat swamps or capsizes, don't leave it and start swimming for shore. Empty or full of water, right side up or bottom side up, a small craft will return to the surface and float so that you can hold on to it until help arrives.
4. If your craft is capsized and more than one person is involved, clasp wrists, not hands, across the bottom of the boat and wait until help arrives. Small boats have sufficient buoyancy to keep afloat those who know how to hold on to them safely.
5. Wear life preservers . . . particularly if you cannot swim.
6. Staying with your boat is not the only chance for safety. Wooden seats or floor racks will support a person's weight in the water.
7. Do not stand up in a boat without adequate support and never stand up when the boat is in motion.
8. Warning signs around locks and doors are for your protection. Obey them.
9. When storms approach, head for shore. If you are caught in a storm in a small boat and the waves are high, do not race for shore. Instead, reduce the speed of the boat for it will ride the crest easier going slowly.

Certainly there are many warnings that should be implanted in the minds of the outdoorsmen on being safety conscious. The most prevalent cause of tragedy when embarking on a vacation is careless driving. Automobiles are useful and convenient devices but without safety conscious operators they may become the fatal obstacle for the anticipated pleasure trip. If you have had anything intoxicating to drink or are too tired, do not drive home from your out-of-doors vacation. Chances are that you may never live to tell of your prowess in the hunting field or with a fly rod. Have a good time but keep a sensible head on your shoulders and be safety conscious for yourself and others.

Game Commission Photo by Kesteloo

Wild game can be delicious if it is prepared properly. Many cooks ruin good meat by incorrect preparation.

PROOF OF THE HUNT IS THE EATING

By FLORENCE S. BLANKENSHIP

Chief, Circulation and Distribution Section

MANY a happy hunter has enthusiastically brought home his bag of game only to have it ruined by bad preparation. This is poor conservation as well as a waste of delicious food.

Meat that has been dressed in the field needs to be cleaned and refrigerated. The old process of chilling and aging game by hanging it in the open is no longer necessary. Your local cold storage plants will hold your big game for the necessary period of aging. Small game may be refrigerated at home.

Game cookery is no different from other cooking and with modern equipment most of the guesswork has been eliminated. Your pressure cooker will take care of the tougher cuts and do away with the long slow process formerly used. Judge your meat for age and cut before deciding how to cook it. Stringy, coarse-looking meat should be cooked in a pressure cooker or a dutch oven with slow moist heat. Small young game can be broiled, fried or roasted. There are a few basic rules which it will pay to follow. These rules apply to all types of game.

1. Start with clean, thoroughly chilled meat, preferably that which has been aged. (Venison a week to ten days, small game two to three days.) A vinegar-soaked cloth is ideal for wiping the meat and removing stray hairs. This is much better than water. Small game, such as rabbits, squirrels, etc., should be soaked in a vinegar and water solution. This may or may not contain spices, subject to your personal taste. The vinegar tenderizes the meat and helps in removing some of the gamey taste.

2. All wild game is dry and does not contain streaks of fat. This makes larding absolutely necessary. Butter, lard or any cooking oil may be used but I find that bacon fat gives the best flavor. Strips of bacon or salt pork may be placed across the meat; if the cut is roasted frequent basting improves the flavor and adds moisture. When preparing wild fowl lard only the breast.

3. Use stock for basting — this may be made from scraps of meat, a large lump of butter, finely cut onion, celery and seasonings to taste. The onion may be omitted and wine or orange juice added with enough water to cover. This should be kept simmering so it is hot when used for basting the roast or fowl. Left-over stock may be added to pan drippings to make gravy.

4. Spices—may vary, from a few to many, depending on your taste. Here is where your imagination and general knowledge of suitable spices is needed. Salt and freshly ground pepper are necessities, a bay leaf or two, garlic (rubbed on pan or meat for the discriminate), paprika and wine. For those who are timid when it comes to experimenting with spices, the mixed poultry spices or sausage seasonings can be used in moderation. These give a variety of flavor and eliminate the fear of overdoing some of the lesser known spices. A word of caution—use them lightly as a large portion is sage.

5. Dressings—your favorite dressing (oyster, bread, apple or chestnut etc.) may be used. I usually place an apple and an orange in the cavity of a goose or turkey and cook until about half done, then remove the fruit and replace with dressing.

6. Side Dishes—wild rice is a favorite with all game and may be used either boiled or in a casserole with mushrooms. Some cooks make a dressing of the rice. Tart jellies such as cranberry, currant or orange make appetizing sauces.

These general rules will be sufficient for the advanced cook and for those who are learning there are many excellent cookbooks available. Once you have learned to properly prepare the fruits of the hunt, you will be the first to greet the hunter with, "What luck did you have?"

Game Commission Photo by Kesteloo

Rivers are like people—they change moods many times during the day. The York is typical, offering a great deal of interest to the residents along its shores.

My Neighbor, The York*

By NEVILLE ANN LONG

UNDOUBTEDLY, much has been written about the York River from a historical point of view, or by various marine magazines. However, to one who is relatively unfamiliar with the latter and quite weary of hearing of the former, it possesses only one aspect—its beauty. Because I live so close to its banks, it is almost impossible for me not to notice its ever changing moods.

Usually I see it first between five and six, just as the sun is peeping over the horizon. Depending on the

*Reprint from "The Christian Science Monitor," Boston, Massachusetts, March 9, 1955.

weather, it may be calmly misty or sun flecked and dancing gaily as the wind blows briskly over its surface. On cloudy mornings the sunrise will cast a faint pink glow on the horizon which is in turn reflected on the water. At other times, when the sky is cloudless, the sun will arise like an atomic fireball—brilliantly red with a glowing rim of yellow. This spectacle, which is mirrored on the river as a wide golden path sparkling with gems, broadens into a causeway over the water.

Later on during the morning, if it is hot and humid, a mist will rise across the river and hide the bank almost up to the mouth. From my yard, all that I can see are the grayish-green tops of pine trees. The mist occasionally lasts all day, but usually by noon a fresh sea breeze will spring up and blow it quickly away.

However, if the day is sunny and clear, the river will gradually bloom with a queer variety of flowers. A stranger would think, perhaps, that they are giant water lilies, but upon closer inspection they prove to be rowboats with two or three eager anglers in each one. On a calm day there may be between 10 and 15 boats of all sizes, from ordinary rowboats to moderate-sized cabin cruisers.

By early afternoon the river attains full beauty. It becomes almost an ultramarine blue, and with the sunlight sparkling on its surface it appears a thing alive—a constantly moving and ever changing blue carpet flecked with gold, which I never tire of watching.

However, to me, the river is most beautiful from about six o'clock until dusk. My favorite time of day has always been the twilight hours. I don't know why; perhaps because there is a certain stillness in the air then which tells me that now all nature is at rest, and a lover of her beauty is free to contemplate it since her work is also ended.

Once the sun has set, a cooling and gentle breeze will often spring up, rustling through the two willow trees near the bank. And if you look toward the mouth of the river you can sometimes see several sea gulls flying toward a small beach at the foot of the bank nearby. Framed against the glowing sunset, they seem almost like the albatross.

At night the river attains a new quality—mystery. You have only to venture along its banks, either by foot or in a boat, to feel it. The full moon sometimes illumines the surface but most of the time it remains dark with just enough light to distinguish the horizon at its mouth. Many times have I gone out in our motorboat then, and I have never tired of noticing how the several coves on the opposite shore appear to be traps for the unwary mariner. The silent pine trees surrounding these coves lure you to explore their banks. It is not often that I yield to their temptation, however, for submerged tree trunks can be hazardous, especially at night.

This, then, is my neighbor and friend—the York River. Ever changing, yet always the same, it has brought me countless hours of happiness. I will always remember it fondly, no matter where I may live.

SANITATION CREWS (Continued from page 14)

material. In addition, millions of blow flies, flesh flies, dung flies, tumble bugs and others contribute their time and effort in the clean-up work.

In our streams we find catfish, crayfish, turtles, eels and others carrying on a crusade of cleanliness.

People throughout the world frown upon or unjustly persecute our friends, the scavengers. They should realize that these insects, animals and birds perform a great service for us in maintaining our surroundings in a sanitary condition. Were it not for these creatures our world would most certainly be strewn with dead plant and animal material.

Every living organism has a reason for being on the earth. The job it performs may be obscure but, nevertheless, it is important. We should be thankful for our efficient sanitation department and welcome its members into our community.

The next time you travel afield to enjoy the wholesome atmosphere of your favorite picnic spot or hunting area, or perhaps hike on your favorite trail during the Christmas holidays, give some thought to the large number of beneficial scavengers working 'round the clock' to keep it clean and beautiful. And remember, they too have a place in this biologic world.

Things You May Not Know

The popular notion that geeese are "silly" is misleading, for careful observation indicates they are above average in intelligence and are resourceful in the face of danger.

* * *

Florida's everglade kite is considered to be the third rarest bird in America. It eats only fresh-water snails, which are destroyed when their marsh homes dry up. When this happens, the kites must move elsewhere.

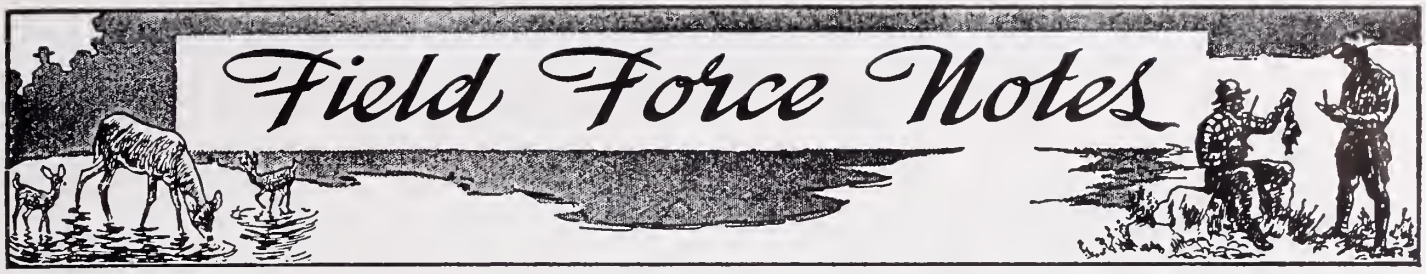
No bird of prey except the shrike has the power of song.

* * *

Rabbits and opossums are believed to be the most ancient species of the known animals living on the North American continent.

* * *

The earliest record of a banded bird is that of a heron captured in Germany in 1710. The metal bands had been placed on its leg in Turkey several years before.



Trophy Competition

The North American Big Game competition of the Boone and Crockett Club will give hunters a chance to submit trophy records. No matter what year the trophy animal was taken, it is eligible in the 1957 competition provided it has not been submitted earlier. Details may be had from the club secretary, Mrs. Grancel Fitz, 5 Tudor Place, New York 17, N. Y. Request an entry chart for the species involved, and mail back the completed chart before the end of the year. Do not ship the trophy unless otherwise instructed.

Virginia affords some mighty nice trophies of deer. The Commission of Game and Inland Fisheries therefore urges hunters to compete in this, the eighth annual contest of the club.

Fall Field Trial Held by Merck Rod and Gun Club

Commissioner Thomas G. Herring of Dayton, Virginia, awarded the prizes at the recent field trial held in Elkton, Virginia, by the Merck Rod and Gun Club, Inc. This trial had 106 bird dogs entered, a remarkable showing for only a three year event. Representatives of the Harrisonburg and Luray press, local radio and television stations and *American Field* magazine were on hand to give them the excellent publicity they deserved.

Photo by Shultz

Commissioner Thomas G. Herring (back row, center) poses with the first three winners of the recent field trial held in Elkton, Virginia.

This was the first field trial in the fall and presages a banner season for this area. The club, as indicated by its name, though operating independently, is sponsored by the famed Merck chemical firm with a large plant and recreation-minded management at Elkton, Virginia. The prime enthusiast and leader for the club is the field trial chairman, J. D. Barnhardt.

Waterfowl Cookery Booklet Available

The Wildlife Management Institute has issued a recommendation for a free booklet published by the Conservation Department of the Olin Mathieson Chemical Corporation in East Alton, Illinois. It is called "Wild Ducks and Coots Make Good Eating." Inasmuch as the American Coot comprises a large and generally unharvested part of our waterfowl population, it is believed that the table qualities of the bird justify its inclusion in this excellent illustrated booklet. Tests at Iowa State College showed that "official testers" were unable to distinguish between the meat of ducks and coots.

Bowhunter Takes Doe on Opening Day

On the opening day of the deer season for bowhunters, E. S. Hobgood of Warwick made a perfect kill on a 90-pound doe in Charles City County at the James River Rod and Gun Club. Hobgood got the deer on the first pull from a 70-pound glass bow using home-made arrows with bear razor-edge arrow heads. He hit the deer in the right shoulder and the arrow broke, the front half passing through the left shoulder. The deer ran about 100 yards and dropped.

Richmond News Leader Photo by Culley

E. S. Hobgood and R. K. Booker, both of Warwick, carry out the fine doe killed by Hobgood on the opening day of bow season.

Hobgood was 25 yards away when he made the successful kill. Pictured with him and his trophy is R. K. Booker of Warwick.

Seaman Joins Air Force Staff

"Woody" Seaman has left the Sport Fishing Institute staff to accept the position of Advisor to the U. S. Air Force on fish and game conservation. He will be responsible for policies pertaining to conservation practices and natural resource management on Air Force lands. This will include fish and wildlife management, forestry and soil management and water control. He will make recommendations in regard to fishing and hunting seasons, creel and bag limits, and expansion of these resources and facilities on Air Force bases, worldwide.

Seaman will work closely in a liaison capacity with governmental departments such as the Fish and Wildlife Service and the U. S. Forest Service as well as with the various national non-profit conservation agencies (for example, Sport Fishing Institute).

Seaman's position as executive secretary will be filled by Robert Paul, who has been assistant executive vice-president on the staff of Sport Fishing Institute.

Audubon Screen Tour in Richmond

The Richmond Natural History Society is presenting three magnificent color films of wildlife at the Mary Munford School this winter in conjunction with the National Audubon Society. They are known as the Audubon Screen Tours and with each film, leading naturalists personally conduct the program.

The first one is on the Everglades and is called "A Touch of the Tropics." It is scheduled for Monday, December 9th. The second one is a drama of all manner of sea life and bird life. It is titled "Between the Tides" and will be presented on Wednesday, January 29th. The last one is a natural history tour of Puerto Rico and is scheduled for Tuesday, April 1.

These cultural programs are of interest to all ages. The far reaching purpose is to promote wildlife protection and conservation education.

Tickets are obtainable in person at the Customer Service Desk of Miller and Rhoads, 6th and Grace Streets, Richmond, and by mail from the Richmond Natural History Society, c/o Mrs. Hawes Coleman, 108 Gaymont Road, Richmond 26, Virginia.

League of Women Voters on Water Problem

A 20-page pamphlet recently issued by the League of Women Voters of the United States, called "On the Water Front," serves as a brief and lucid introduction to the various phases of the water problem — a subject that has been called the number one domestic problem in the United States.

The League study covers both water resources and the various government agencies which manage, conserve and develop them. Also touched upon is the interrelationship of federal, state and local agencies and short descriptions of some of the programs that are set up on a "partnership" basis. The co-ordination between agencies is also discussed.

Copies of "On the Water Front" may be ordered for 25 cents each from the League of Women Voters at 1026 17th Street, N.W., Washington 6, D.C.

Big Smallmouth Caught in James River

For those who take a dim view of good fishing around Richmond, the accompanying photograph should change the picture somewhat for them. Carroll Fowlkes, Jr., fishing in the vicinity of the old Westham Bridge on the James, caught this over average sized smallmouth that weighed in at 5 pounds and measured 22 inches. His young son "Chip" is obviously impressed.

Richmond News Leader Photo by Max Ailor

The smallmouth held by Carroll Fowlkes, Jr., is of sufficient size to make a fisherman's blood tingle. Who said the fish were small around Richmond?

Bow Hunters—Be Careful

"I didn't know it was loaded" is hardly applicable to bow hunters but strange as it may seem, there were many accidents reported during the 1956 archery season. Most of them were self-inflicted by the razor sharp steel hunting heads held carelessly in the hand. According to I. E. Stotz of Alleghany National Forest in Pennsylvania and A. H. Anderson, the supervisor of the George Washington National Forest, they welcome bowhunters but they believe that some cold facts on the dangers of bowhunting should be given them.

Arrows have great penetrating power, Stotz observed, when he saw an Indian skull in a museum with an obsidian (volcanic glass) arrow head embedded in the brain pan. Death must have been instantaneous. English longbowmen were able to pin fully armored French knights to their horses with cloth-yard shafts.

The modern hunting bow with its steel-tipped arrows more nearly resembles the English longbow than the bow of the American Indian. The English longbowman was the most dreaded warrior in the Middle Ages.

The safety code of the archer is not as Longfellow said,

"I shot an arrow into the air,
It fell to earth. I know not where."

An arrow shot into the air could come down on some bystander's head and pin his hat to his skull. It is important to know what you are shooting at, and important that you have enough skill to hit where you aim.

Coordination of Big Game Hunting Arrangements: Blue Ridge Parkway —George Washington National Forest

Officials of the Blue Ridge Parkway, the George Washington National Forest, and the Virginia State Game Commission met at Buena Vista, Virginia, on October 10th, to discuss ways to help hunters get into the authorized national forest hunting areas this fall.

Hunting is prohibited on Blue Ridge Parkway lands, consistent with federal laws in effect in all National Park Service areas. Parkway officials pointed out, however, that the National Park Service wants to cooperate with hunters and the U. S. Forest Service by permitting hunters to use completed portions of the parkway as a route of travel to authorized hunting areas within the George Washington National Forest.

The section of the parkway between U. S. 60 and the James River is still under construction and will not be open to public travel this hunting season. However, hunters will be permitted to cross the parkway in vehicles at Robinson Gap, Indian Gap, and the crossing leading to Pea Vine Mountain to reach hunting areas on the other side. Hunters are asked not to travel between these crossings on this uncompleted section of the parkway.

Representatives at the meeting jointly agreed on a hunting program to be effective when parkway sections are completed through the George Washington National Forest in 1958, as follows:

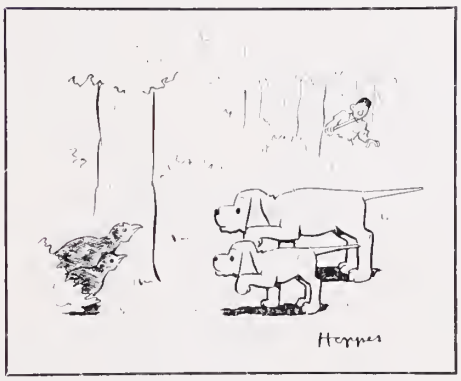
The U. S. Forest Service will provide as much access as possible by means of forest roads into the authorized hunting areas. The Blue Ridge Parkway will serve as a route to these forest roads. This will eliminate the need for parking hunters' vehicles on the parkway, by allowing them to go directly to the hunting areas.

Watershed Projects Delay Hit

"The U. S. Corps of Engineers continues to fight our small watershed program. All the fine promises of cooperation from General Itschner and his aides appear to be so many honeyed words."

The National Association of Soil Conservation Districts in the above paragraph are irked by the roadblocks being thrown in the path of the national watershed development program by the Corps of Engineers.

This is the program that was authorized by the watershed protection and flood prevention act, Public Law 566 of 1954. It provides for local-state-federal cooperation in developing upstream areas through the erection of small-retention reservoirs and the application of water and soil conservation techniques.



States Receive $25 Million in Federal Aid Funds for Sport Fish and Wildlife Restoration

State programs for the restoration of sport fishing and wildlife in the 48 states will have their biggest year in 1958 with the apportionment of $25,130,000 in federal aid funds, Assistant Secretary of the Interior Ross Leffler has announced.

This represents an increase of $4,068,000 over the previous high apportionment of $21,062,000 in 1957.

On the basis of one dollar from the state for every three of federal funds, $32.5 million will be available to state conservation departments for their fish and game programs in fiscal year 1958.

Sport fishing programs will receive $6 million in 1958. Wildlife restoration projects will have $19,130,000, which includes the third 20 percent—$2,693,494—of the accumulated backlog of federal aid funds. In 1955 Congress authorized the appropriation, over a five-year period, of the reserve of $13,467,468 which had accumulated from 1939 to 1946 when Congress did not appropriate total receipts annually from the excise tax on sporting arms and ammunition.

The wildlife total in 1958 is an increase of $2,894,000 over last year's apportionment of $16,236,000. The amount available for sport fishery projects is $1,174,000 greater than the 1957 total of $4,826,000.

Reduction in Size of North River Game Refuge

Forest Supervisor A. H. Anderson of the George Washington National Forest has announced that the U. S. Forest Service, in cooperation with the Virginia Commission of Game and Inland Fisheries, is reducing the size of the North River Game Refuge prior to the opening of the fall hunting season.

The newly opened area will include that part of the refuge lying on the south side of the North River Road between Camp Todd and the Lebanon Road. The section from the Lebanon Road to the Staunton Dam will remain closed to all forms of hunting at any time. Hunting on the opened area will be governed by the same laws which are in effect in any other part of the North River. Signs on the ground will outline that section of the refuge which will remain closed.

Supervisor Anderson said the refuge was originally established in 1938 when deer were first released on the forest. It was set up to protect deer during the early years when a build-up of the herd was needed to produce enough deer for hunting.

The refuge has served its purpose, Mr. Anderson added, and on the recommendations of the Commission game biologists, the Forest Service and the Commission have mutually agreed to eliminate this 3,500 acres as a closed area.

This increase in the hunting area will give the hunters more room to hunt and should result in a more even distribution of the kill. This will tend to keep the herd more in balance with the range.

Wildlife Questions and Answers

Ques.: **I plan to take my 12-year-old son hunting this year for the first time. Is he required to have a license at this young age?**

Ans.: Yes. A license is required to hunt regardless of age. May I remind you that a great deal of responsibility is connected with instructing a young hunter. You should accompany the boy at all times until he is thoroughly capable of handling a firearm. The Uniform Hunter Casualty Report, compiled by the National Rifle Association, indicates that each year more accidents are being caused by young hunters.

Ques.: **Will the use of shot shells in a .22 rifle damage the rifling?**

Ans.: The damage resulting from the use of shot shells in a .22 rifle is dependent upon the type of rifling in the barrel. If the gun is made for exclusive use of .22 shorts, the rifling will not be damaged. If the gun is designed for .22 shorts, longs or long rifle cartridges, the rifling will be damaged by lead deposits and, in turn, interfere with the accuracy of the gun.

Ques.: **Where can I obtain detailed county maps? I have been trying for the past two hunting seasons to locate a map which would be helpful for hunting trips.**

Ans.: Your Game Commission does not have county maps available for distribution. The State Highway Department, Richmond, Virginia, has county maps available showing all state roads for a very nominal fee.

Topographic maps showing elevations, roads and contour lines are available from several agencies in Virginia. These maps are excellent for showing terrain and are a great help in mountainous country. Agents for these maps are as follows:

Virginia Division of Geology, Box 3667, University Station, Charlottesville, Va.

J. P. Bell Co., 816 Main St., Lynchburg, Va.

E. Smola Co., 131 Twenty-fifth St., Newport News, Va.

Henry Eagleton Co., 130 Bonsh St., Norfolk, Va.

Everett Waddey Co., 1105 E. Main St., Richmond, Va.

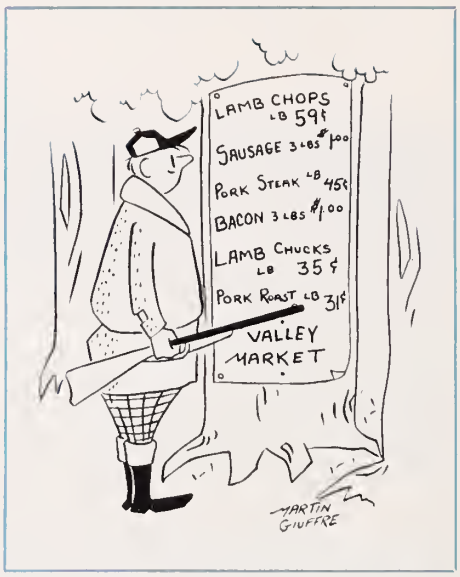
C. B. Malcolm & Son, 632 Commerce St., S. W., P. O. Drawer 1178, Roanoke, Va.

Geological Survey Office, 1028 GSA Bldg., 19th & F Sts., N.W., Washing-ing, D. C.

Ques.: **In my science class we were told the ocean contained many valuable elements. Is this true?**

Ans.: Yes. A cubic mile of sea water contains approximately 300,000 tons of bromine, four million tons of magnesium chloride and thousands of tons of uranium, gold, silver and other costly minerals.

Modern science has devised methods for extracting magnesium, bromine and salt but the removal of other minerals is too expensive for profitable operation. Continued advances in scientific techniques will probably make the extraction of other minerals economically feasible in the future.



Ques.: **Could you possibly give me some information on where to hunt in Virginia?**

Ans.: We have in Virginia two national forests located almost entirely west of the Blue Ridge Mountains. The George Washington has approximately one million acres and the Thomas Jefferson contributes around one-half million acres. These two forests make up the largest public hunting ground east of the Mississippi River.

For information on a certain county the best source is the county game warden. The Commission has a small publication, "Tell Me Warden," which lists the names, addresses and phone numbers of all enforcement and technical personnel in Virginia. These publications are free upon request.

Ques.: **Can turtles be aged accurately?**

Ans.: Accurate age determination of turtles depends upon three factors: (1) living in a climate that causes regular interruptions in growth, (2) rapidity of growth and (3) method of growth.

In certain species each horny shield of the shell increases in size peripherally. When growth is stopped or retarded by hibernation, the succeeding season of fast growth shows up plainly and results in a method for aging. This works only in certain species and often the plates become worn on many turtles, thus preventing a reliable aging process. The one sure way of determining accurate age is by raising a juvenile turtle in captivity.

Ques.: **How does a baby bird manage to escape from an egg?**

Ans.: In the last days before hatching, the immature bird develops a hard bony structure on the upper mandible known as an egg tooth. With this structure the bird manages to break the shell and emerge from the egg.

Ques.: **Does a termite actually digest the wood it consumes?**

Ans.: Yes and no. This may be a little misleading, but the actual digestion is performed by minute unicellular animals in the termite's digestive tract. If these tiny animals are removed from the digestive tract, the termite will continue to eat wood but will starve to death.

The cellulose digesting animals must be present to convert the sawdust into a substance that furnishes nourishment to the termite.

Ques.: **Is it true that the approximate temperature can be determined during the summer months by the chirping of crickets?**

Ans.: It sounds rather ridiculous but the temperature can usually be calculated by the chirping of crickets. This is done by counting the number of chirps a cricket makes in 14 seconds and adding 40. The total of these two figures is the temperature. Ninety percent of the time it is accurate to within 2°.

Ques.: **Does the black bear make a characteristic noise when it becomes angry?**

Ans.: The bear quite often emits a low growling sound and an accompanying noise which resembles a cough. This characteristic coughing noise is caused by gnashing the teeth together in a loud fashion.

Ques.: **Can the red fox swim?**

Ans.: Yes. The red fox is an excellent swimmer but, under normal conditions, tries to avoid water. If closely pursued by dogs, he will occasionally make his escape by swimming a small lake or stream.

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